A dielectric ceramic according to the present invention is suitably used as a material forming dielectric ceramic layers provided for a multilayer ceramic capacitor which is required to have superior reliability at a high temperature.

CLAIMS

1. A dielectric ceramic comprising:

a primary component composed of a barium titanate base composite oxide represented by the general formula $(Ba_{1-h-i-m}Ca_hSr_iGd_m)_k(Ti_{1-y-j-n}Zr_yHf_jMg_n)O_3$, in which $0.995 \leq k \leq 1.015$, $0 \leq h \leq 0.03$, $0 \leq i \leq 0.03$, $0.015 \leq m \leq 0.035$, $0 \leq y < 0.05$, $0 \leq j < 0.05$, $0 \leq (y+j) < 0.05$, and $0.015 \leq n \leq 0.035$ hold, Ba is partly replaced with Gd, and Ti is partly replaced with Mg; and

an additive component containing Ma (Ma is at least one of Ba, Sr, and Ca), Mb (Mb is at least one of Mn and Ni), and Mc (Mc is Si or includes both Si and Ti), in which Ma is contained in an amount of less than 1.5 moles (however, 0 moles are not included) with respect to 100 moles of the primary component, Mb is contained in an amount of less than 1.0 mole (however, 0 moles are not included) with respect to 100 moles of the primary component, and Mc is contained in an amount in the range of from 0.5 to 2.0 moles with respect

to 100 moles of the primary component.

2. The dielectric ceramic according to Claim 1, further comprising, with respect to 100 moles of the primary component, 0.5 moles or less of R_2O_3 (R is at least one of a lanthanoid element except Gd, Y, and Sc) as a subcomponent.

3. The dielectric ceramic according to Claim 1 or 2, further comprising, with respect to 100 moles of the primary component, 1 mole of less of Al_2O_3.

4. A method for manufacturing a dielectric ceramic comprising:

a first step of obtaining a reaction product composed of a barium titanate base composite oxide represented by the general formula $(Ba_{1-h-i-m}Ca_hSr_iGd_m)_k(Ti_{1-y-j-n}Zr_yHf_jMg_n)O_3$, in which $0.995 \leq k \leq 1.015$, $0 \leq h \leq 0.03$, $0 \leq i \leq 0.03$, $0.015 \leq m \leq 0.035$, $0 \leq y < 0.05$, $0 \leq j < 0.05$, $0 \leq (y+j) < 0.05$, and $0.015 \leq n \leq 0.035$ hold, Ba is partly replaced with Gd, and Ti is partly replaced with Mg;

a second step of preparing Ma (Ma is at least one of Ba, Sr, and Ca), Mb (Mb is at least one of Mn and Ni), and Mc (Mc is Si or includes both Si and Ti);

a third step of mixing the reaction product obtained in the first step and Ma, Mb, and Mc prepared in the second step so that less than 1.5 moles of Ma (however, 0 moles are not included) is contained with respect to 100 moles of the reaction product, less than 1.0 mole of Mb (however, 0 moles

are not included) is contained with respect to 100 moles of the reaction product, and 0.5 to 2.0 moles of Mc is contained with respect to 100 moles of the reaction product; and

a fourth step of firing the mixture obtained in the third step.

5. The method for manufacturing a dielectric ceramic, according to Claim 4, wherein, in the third step, 0.5 moles or less of R_2O_3 (R is at least one of a lanthanoid element except Gd, Y, and Sc) is further mixed as a subcomponent with respect to 100 moles of the reaction product.

6. The method for manufacturing a dielectric ceramic, according to Claim 4 or 5, wherein, in the third step, 1 mole or less of Al_2O_3 is further mixed with respect to 100 moles of the reaction product.

7. A multilayer ceramic capacitor comprising: a laminate having dielectric ceramic layers which are laminated to each other and interior electrodes which are provided along specific interfaces between the dielectric ceramic layers and which are overlapped with each other in the lamination direction; and exterior electrodes formed on exterior surfaces of the laminate so as to be electrically connected to specific ones of the interior electrodes, wherein the dielectric ceramic layers each comprise the dielectric ceramic according to one of Claims 1 to 3, and the interior

electrodes each contain a base metal as a primary component.